Wessex Rivers Trust

Looking After Your Garden Riverbank

A guide to how your garden can improve the health of the river.

Introduction

Our chalk streams are under greater pressure than ever. These internationally rare habitats support a huge range of wildlife so it's crucial we all play our part in protecting and enhancing them. Abstraction, climate change, pollution and an increasing human population all put pressure on these fragile habitats. Organisations such as the Wessex Rivers Trust are doing all we can to combat these issues and make our rivers more resilient.

The condition of the riverbanks is of vital importance to the health of the river so a key part of our work is to look at how land directly surrounding rivers is managed. At one end of the scale we talk to estate managers and farmers managing huge areas of land, and (no less importantly) at the other end of the scale, we engage with homeowners, such as yourself, whose gardens border the river.

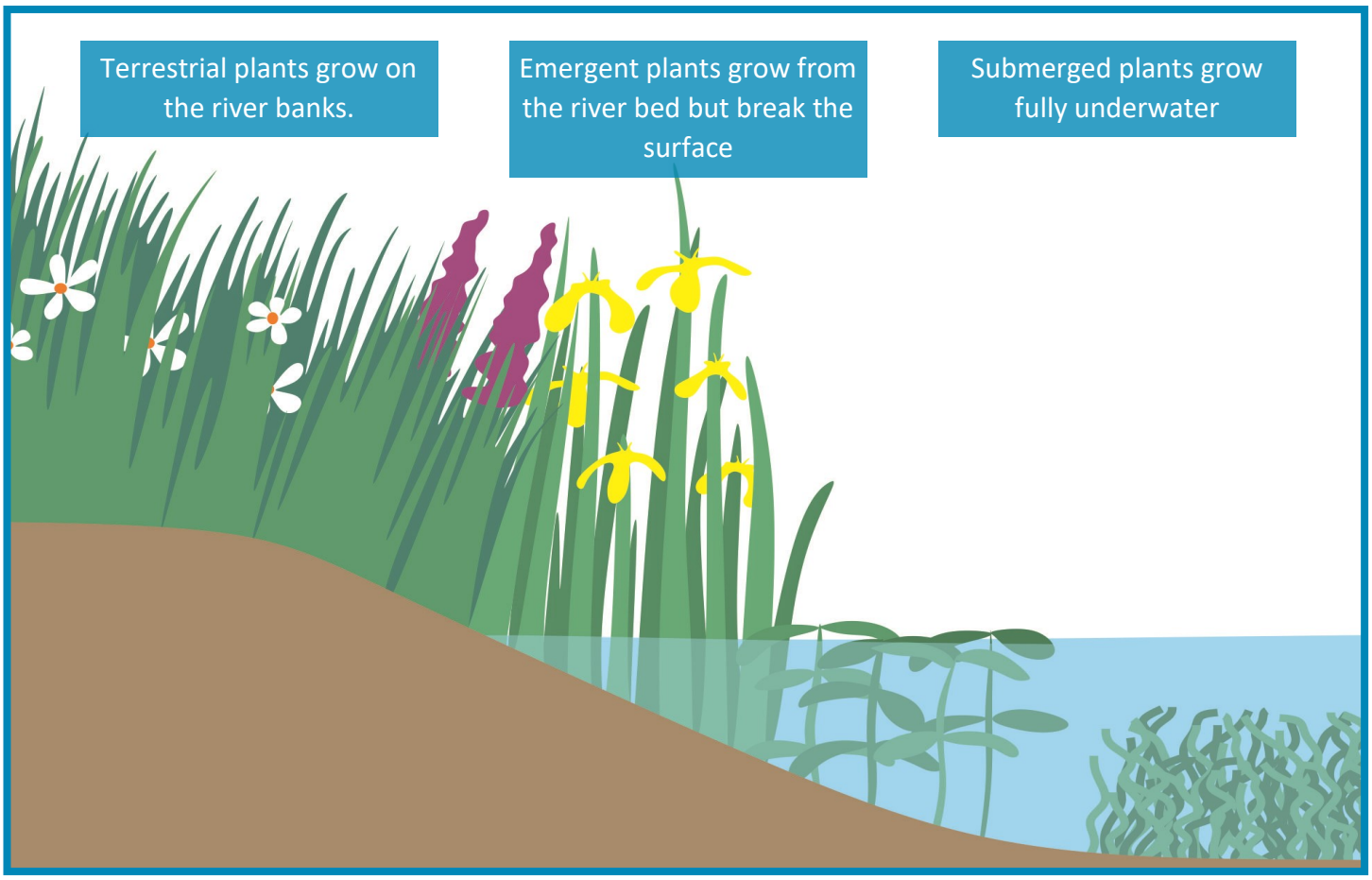
It might seem like your garden is a relatively small part of the puzzle and it can feel as though there's not much you can do to help. However, collectively, privately owned gardens form many kilometers of chalk streams riverbank. Small garden-scale improvements can collectively add-up to significant ecological benefits.

We hope that this document illustrates just how important your riverbanks are, and how a well-managed riverbank can be of benefit not just to the river but to you too.

The Marginal Fringe

What is the marginal fringe?

Put simply, the marginal fringe is what we call the vegetation lining the edge of the river, or indeed the edge of your garden. It's generally made up of a variety of plant species that we categorise as being submerged, emergent or terrestrial. There's no exact measurement for what counts as marginal fringe, but for the purpose of this document we're talking about roughly one metre either side of the water's edge.



Why is the Marginal Fringe so Important?

Vital Habitat

Juvenile fish find refuge from predators in amongst the emergent plants and some species, such as the lamprey, spend much of their lives living exclusively in the river margins. Adult fish benefit too, where there is good cover is available you'll often find the largest trout lying close in to the bank.

Water voles, an endangered species, only make their burrows in well-vegetated banks and other mammals use the cover of a marginal fringe as a corridor to move around their territory. The river margins are also vital for many insects. Dragonflies and damselflies start their lives as aquatic insects before crawling up marginal plants to shed their skin. Mayfly too emerge from the river before taking refuge on marginal plants or trees before completing their lifecycle.

A mayfly rests on Yellow Flag Iris in the marginal fringe.

Stopping erosion

Marginal plants protect your banks from erosion. The roots from a diverse range of marginal plants bind the banks together and provide excellent protection. Just as important are the stems of emergent plants in the river margins which slow the water adjacent to the bank, further decreasing erosion.

Engineered solutions such as boards, brick work and shuttering will always require ongoing maintenance and eventually need replacing completely. Even when in relatively good condition, water will always find a way through the smallest gap and start the process of erosion.

Erosion happens when there are no roots to bind the banks together.

No marginal fringe means no barrier to sediment entering the river.

Filtering surface water run-off

Too much fine sediment in a chalk stream is very problematic. Siltation decreases the water quality, dramatically diminishes the success of spawning fish, and reduces the diversity of aquatic invertebrates. Where there is no marginal fringe, rainwater can wash sediment from the land straight into the river. A marginal fringe provides a natural filter between the land and river, capturing the sediment before it gets to the river.

Combating drought

Chalk stream flows are less reliable than they historically were. Diverse margins help the river cope with fluctuating flow by slightly encroaching into the channel during low (summer) flows, and 'peeling back' during higher (winter) flows. This helps maintain flow speed and depth along the center of the river, keeping gravels clean for fish to spawn on and invertebrates to live in, as well as helping keep conditions right for the growth of important instream aquatic plants.

During low flows the marginal fringe narrows the river naturally.

The Beauty of the Marginal Fringe

Beyond the ecological and practical benefits, a marginal fringe can also be a beautiful addition to a garden setting. The lush greens of sedge and reed species are punctuated by the vibrant colours of native wildflowers that naturally thrive on our riverbanks.

We're extremely fortunate that many of the native plants which we find on the banks of our chalk streams can be brightly coloured and utterly beautiful.

After all, the marginal fringe is a part of your garden, so why shouldn't it look at its best? Below are just a few of the flowering species that grow particularly well on a chalk stream riverbank.

Purple loosestrife (*Lythrum salicaria*)

Marsh marigold (*Caltha palustris*)

Water mint *(Mentha aquatica)*

Meadowsweet *(Filipendula ulmaria)*

Yellow flag *(Iris pseudacorus)*

Flowering rush *(Butomus umbellatus)*

Hemp Agrimony *(Eupatorium cannabinum)*

Be Aware of Invasive Non-Native Species

Orange Balsam

Above and below water, native plants both are the building blocks for life in our rivers.

Invasive non-native plant species often out-compete and displace our native flora, and present a significant risk to wildlife in our rivers. So, it's important to remove these harmful plants if you spot them on your garden riverbank.

Many garden centres and even government designations are not up to date on the environmental impact posed by many of these species available on the market, which is why it's best to avoid purchasing and introducing any non-native species.

Himalayan Balsam

Monkey Flower

Removing Invasive Non-Native Plants

Different invasive species require different control methods. For example, some of the most common species, including Himalayan balsam and monkey flower, simply require pulling up in the summer before the plants go to seed. Removing as much of the rootstock as possible and then allowing it to biodegrade in an area that doesn't flood will prevent recolonisation. Whilst simple to control, these species produce hundreds of seeds and quickly dominate the riverbank, so it is important to tackle them at the earliest opportunity. Some species, such as Japanese knotweed and Water fern are best tackled by professionals.

The most wildlife-friendly method is to encourage native species that have co-evolved with British wildlife and are intrinsically linked to the food web. Many species rely on our native flora, such as butterfly and moth caterpillars which feed exclusively on certain native plants. Whether this be from passive management and observing what colonises naturally, or via a more active approach, planting or seeding the riverbank with beautiful native plants such as those identified on page 6

If you're unsure whether a plant on your riverbank is an invasive non-native species, or would like some ideas of suitable species for your patch, please get in touch with the Trust for further guidance or go to our project website https://arcg.is/1LfTzS

Poor Riverbank Management.

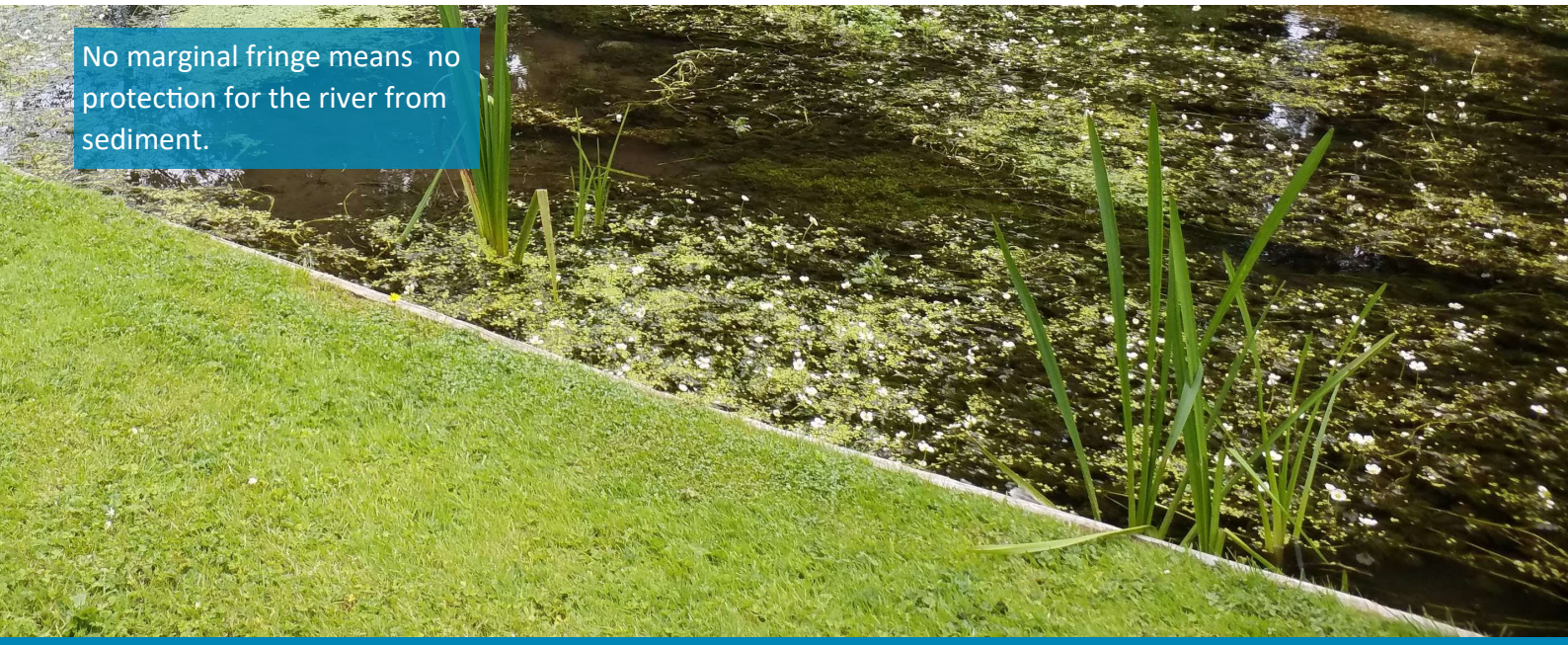
The most common practice undertaken in gardens that is detrimental to the health of the river is mowing. We understand that lawns need to be mown, but mowing right to the edge means no marginal fringe. Another very common practice is the boarding or ‘shuttering’ of river banks, giving them a shear edge. This prevents emergent marginal plants from establishing properly.

When a riverbank is poorly managed, it can rob the river, (and your garden) of all the benefits of a marginal fringe. Erosion is increased, sediment enters the river unabated and fish, mammals and insects don’t have the vital habitat they need, reducing biodiversity.

Wooden boards mean marginal plants can’t establish.

Bankside mowing and wooden shuttering denude the river of a marginal fringe.

Spiling might look pretty but has similar negative impacts to shuttering.



No marginal fringe means no protection for the river from sediment.

Establishing a Marginal Fringe.

Forming a marginal fringe of terrestrial plants really couldn't be simpler. Less (management) is more. It's fine to mow small gaps (<1m wide) to access the river, or land fish if you own fishing rights, but an unbroken fringe is best. Whilst wildflowers will find their way in naturally over time, you can speed up the process by planting seeds, plugs or established plants if preferred.

Emergent plants take a little more effort to establish, growing in the silty river margins, but where rivers have a shear edge silt may not settle naturally. Banks can be reprofiled to give the river a natural marginal slope on which plants will establish, however this isn't always possible or practical – especially in a garden setting. If this is the case, brushwood staked securely into the river margins traps silt and enables the plants to grow. The brushwood quickly becomes covered in lush, green growth and disappears from view, being replaced by root systems as the wood biodegrades.

Vegetation quickly takes over brushwood staked in-to the margins.

Translocated plants starting to establish in the marginal fringe.

Brushwood staked into the margins helping marginal plants to grow.

Fully established marginal fringe one year after creation.

Good Riverbank Management.

Once a marginal fringe has been established looking after it really couldn't be any simpler, you just leave it to grow. This allows the riverbank to fulfill its purpose and provide wonderful habitat for the fish, insects and mammals that live in and around the river. And as a nice bonus, managing your riverbank in this way will knock a few minutes of your mowing regime over the summer.

Here are some examples of good marginal fringe management.

The contrast between neatly mown lawn and colourful fringe looks stunning through the summer.

Allowing the marginal fringe to grow helps reduce erosion.

Meadowsweet brings beautiful cream colours to the marginal fringe.

Lush green vegetation on the riverbank provides vital habitat to many creatures.

We're here to help.

Here at the Wessex Rivers Trust we're passionate about the health of our chalk streams. We can help with advice, design and installation of measures to improve the riverbank in your garden.

Please feel free to get in touch by emailing: **info@wessexrt.org.uk**

Healthy rivers for wildlife and people

Wessex Rivers Trust